REMARKS

The Examiner has rejected claim 1 under 35 U.S.C. 103(a) as being unpatentable over Alperovich et al U. S. Patent No. 6,018,660 in view of well known prior art.

The Examiner states regarding claim 1, Alperovich et al discloses essentially all the claimed invention as set forth in the instant application, further Alperovich et al discloses an apparatus and method for grouping carriers to minimize the occurrence of call blocking in a satellite-based communications network. In addition, the Examiner states, Alperovich et al discloses a method for operating a mobile satellite communication system having at least one gateway (350), at least one user terminal (300), comprising steps of: for a site to be protected from UT transmissions, specifying an exclusion zone having a confidence limit (which reads on "If the satellite subscriber's actual geographic location is within the area prescribed to the barring feature, the barring feature is invoked", as disclosed in col. 3, lines 9-11) associated therewith; and selectively providing service to a UT (300) depending on a determined location of the UT relative to the exclusion zone (which reads on, as disclosed in col. 15, lines 13-17) and on an estimated error (E) of the determined UT location (which reads on "Otherwise, the barring feature is not invoked", as disclosed in col. 3, lines 11-12). However, the Examiner submits, Alperovich et al fails to specifically disclose the use of a constellation of satellites.

The Examiner contends, however, that the use of a constellation of satellites is well known in the art and at the time of the invention it would have been obvious to a person of ordinary skill in the art to improve Alperovich et al by modifying the system and method for invoking barring features in a satellite network with a constellation of satellites for the purpose of operating a satellite communication system.

Applicants respectfully submit that in Alperovich et al U. S. 6,018,660 there is disclosed a telecommunications system and method for invoking barring features within a satellite network when calls to a subscriber within the satellite network are optimized. When a call is optimized for the satellite subscriber, the actual geographic location of the satellite subscriber is sent to the HLR and the new (optimal) MSC/VLR. This location can be sent as an MSC address, or other form. Therefore, when a barring feature is associated with the call, this MSC address is checked by the serving MSC or the HLR (in the case of barring of incoming calls when roaming outside of the home Public Land Mobile Network country). If the satellite subscriber's actual geographic location is within the barred area, the barring feature is invoked. Otherwise, the barring feature is not invoked.

Furthermore, under the Summary of the Invention at col. 2, line 66 to col. 3, line 12, Alperovich et al discloses "The present invention is directed to telecommunications systems and methods for invoking barring features within a satellite network when calls to or from a

"subscriber within the satellite network are optimized. When a call is optimized for the satellite subscriber, the actual geographic location of the satellite subscriber is sent to the HLR and the new (optimal) MSC/VLR. This location can be sent as an MSC address, or other form. Therefore, when a barring feature is associated with the call, this MSC address is checked by the serving MSC or the HLR (in the case of barring of incoming international calls). If the satellite subscriber's actual geographic location is within the area prescribed to the barring feature, the barring feature is invoked. Otherwise, the barring feature is not invoked."

Applicants respectfully submit that Alperovich et al does not teach, suggest or imply a site to be protected from UT transmissions specifying an exclusion zone having a confidence limit (CL) associated therewith and, furthermore, selectively providing service to the UT depending on a determined location of the UT relative to the exclusion zone and on an estimated error (E) of the determined UT location. Applicants respectfully submit that the limitations as set out in both elements of claim 1 are no where to be found in Alperovich et al. Furthermore, Applicants respectfully submit that at col. 2, lines 18 et seq. it is taught "Within a satellite-based network 205, as shown in Fig. 2 of the drawings, a system of geostationary satellites 200 in orbit are used to provide communication between Mobile Stations (MS) 210 and a satellite-adapted Base Station System (SBSS) 220, which is connected to an integrated Mobile Switching Center/Visitor Location Register (MSC/VLR) 240." Applicants respectfully contend that the SBSS 220 is not in any way equivalent to the gateway as called out in claim 1 since the SBSS 220 as recited in Alperovich et al operates in conjunction with a system of geostationary satellites and neither contemplates, suggests or implies a LEO satellite constellation which operates in concert with a gateway as claimed.

Therefore, Applicants respectfully disagree with the Examiner's contention that the use of a constellation of satellites is well known in the art at the time of the invention so that it would have been obvious to a person of ordinary skill in the art to improve Alperovich et al by modifying the system and method for invoking barring features in a satellite network with a constellation of satellites for the purpose of operating a satellite communication system.

The Examiner has rejected claims 2-12 and 19-25 under 35 U.S.C. 103(a) as being unpatentable over Alperovich et al in view of Maeda et al (U. S. Patent No. 6,352,222).

Regarding claims 2, 6, 8, 9, the Examiner contends that Alperovich et al discloses everything claimed as applied above (see claim 1), however, Alperovich et al fails to specifically disclose the use of the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface.

The Examiner states, however, that Maeda et al discloses a satellite, satellite control method and satellite communication system and, in addition, Maeda et al discloses the use of an exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface (which reads on this as to form such a polygon that includes all the service areas, as disclosed in col. 10, lines 37-39).

Therefore, the Examiner contends it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Alperovich et al by modifying the position location system with the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface as taught by Maeda et al for the purpose of setting the initial value for the orbital inclination angle.

Applicants respectfully contend that Alperovich et al, in addition to failing to specifically disclose the use of the exclusion zone as specified to comprise at least one of a polygon that defines an area, a volume, or a surface, fails to claim a method which protects a site from UT transmissions, specifying an exclusion zone having a confidence limit (CL) associated therewith and furthermore selectively providing service to the UT depending on a determined location of the UT relative to the exclusion zone and on an estimated error (E) of the determined UT location. Applicants respectfully submit that in addition to suffering the same deficiencies of being limited to a geostationary satellite which cannot operate in the method of the instant invention with a gateway as recited, Maeda et al at col. 10, lines 34-39 merely states "In case some service area is not included in a quadrangle having those locations at its corners, additional locations with their own latitude, longitude and elevation are defined so as to form such a polygon that includes all the service areas. This polygon can be formed by plural adjoining triangles." This teaching does not suggest, teach or imply the exclusion zone which protects a site from UT transmissions having a confidence limit (CL) associated therewith and providing service to a UT depending on the location of the UT relative to the exclusion zone and on an estimated error (E) of the determined UT location as defined in the method of the instant claims.

Therefore, Applicants respectfully disagree that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Alperovich et al by modifying the position location system with the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface as taught by Maeda et al for the purpose of setting the initial value for the orbital inclination angle.

The Examiner states regarding claims 3-5, Alperovich et al discloses everything claimed as applied above, directing Applicants' attention to claim 1, in addition Alperovich et al discloses a location of the UT (300) is determined by the UT (300), and transmitted to the GW (which reads on the MSC/VLR) as disclosed in col. 4, lines 23-27.

Applicants respectfully submit that at col. 4, lines 23-27 there is disclosed "However, when such call optimization is performed, barring features associated with the call may not be implemented correctly because the location of the MS is now considered to be the location of the new (optimal) MSC/VLR where the MS is registered." Applicants respectfully submit that claims 3-5 are patentable over Alperovich et al alone or in any combination with Maeda et al for the reasons recited above with regard to claim 1 which are hereby incorporated by reference and, in addition, the recited passage relied upon by the Examiner at col. 4, lines 23-27 does little to cure this deficiency since it relates to when call optimization is performed, barring features associated with the call may not be implemented correctly because the location of the MS is now considered to be the location of the new (optimal) MSC/VLR where the MS is registered. This in no way contemplates determining the location of the UT by the UT and transmitting it to the GW as required by claim 3; determining the location of the UT by the UT in cooperation with the GW as required by claim 4; nor determining the location of the UT by the GW as required in claim 5.

The Examiner states regarding claim 7, Alperovich et al discloses everything claimed as applied above, directing Applicants' attention to claim 1, in addition Alperovich et al discloses the UT (300) is granted service if the value of E is less than CL (which reads on "Otherwise, the barring feature is not invoked", as disclosed in col. 3, lines 11-12).

Claim 7 is seen to be patentable over Alperovich et al for the reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference and, furthermore, the recitation relied upon by the Examiner at col. 3, lines 11-12 does little to cure this deficiency. At col. 3, lines 9 et seq. it is stated "If the satellite subscriber's actual geographic location is within the area prescribed to the barring feature, the barring feature is invoked. Otherwise, the barring feature is not invoked." Applicants respectfully submit this does not suggest, teach or imply that service to the UT is granted if the value of E is less than CL as defined in claim 7.

Regarding claim 10, the Examiner states Alperovich et al discloses everything claimed as applied above, directing Applicants' attention to claim 1, in addition Alperovich et al discloses the exclusion zone is specified to comprise a surface defined by at least two connected points on the surface of the earth and at least a point located above the surface of the earth as disclosed in col. 2, lines 48-59.

Applicants respectfully submit that claim 10 is patentable over Alperovich et al, alone or in any combination with Maeda et al, for reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference and, furthermore, that the recitation found at col. 2, lines 48-59, relied upon by the Examiner, does little to cure this deficiency. Therein it is stated "Therefore, calls within a geostationary satellite network can be optimized so that a subscriber is reallocated to the MSC/VLR which is the most optimal

"for a given call, for example, the closest MSC/VLR to the PSTN of the called party. The optimal MSC/VLR can be located in any country within the geosatellite network. However, as a result of the optimization of calls within the satellite network, a number of barring features, such as barring of international calls (both incoming and outgoing) when the satellite subscriber is within a certain geographical area, cannot be correctly implemented within the geosatellite system because the actual location of the satellite subscriber is not known." Applicants respectfully submit that this recitation does not teach, suggest or imply the exclusion zone as specified in claim 10 which comprises a surface defined by at least two connected points on the surface of the earth and at least a point located above the surface of the earth.

Regarding claims 11-12, the Examiner contends Alperovich et al discloses everything claimed as applied above, directing Applicants' attention to claim 1, in addition Alperovich et al discloses boundaries of the exclusion zone are static as disclosed in col. 4, lines 23-27.

Applicants respectfully contend that claims 11-12 have been shown to be patentable over Alperovich et al for reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference and, furthermore, that the recitation relied upon by the Examiner at col. 4, lines 23-27 does little to cure these deficiencies. Therein there is not taught, suggested or implied that the boundaries of the exclusion zone are static as required in claim 11 nor that the exclusion zone is dynamic and capable of at least one of movement or change in shape as required in claim 12.

Regarding claims 19-25, the Examiner states Alperovich et al discloses everything claimed as applied above, directing Applicants' attention to claim 1, in addition Alperovich et al discloses wherein there are overlapping exclusion zones specified, each having a different value of CL as disclosed in col. 4, lines 23-27.

Applicants respectfully submit that claims 19-25 have been shown to be patentable over Alperovich et al for reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference and, furthermore, the recitation relied upon by the Examiner at col. 4, lines 23-27 does little to cure these deficiencies. Nothing in col. 4, lines 23-27 suggests, teaches or implies overlapping exclusion zones each having a different value of CL as required by claim 19; the exclusion zone is temporary and is established and removed as a function of time as required by claim 20; wherein the values of at least one of CL and E vary as a function of time as required by claim 21; wherein at least one of the location or shape of the exclusion zone varies as a function of a change in location of the UT as required by claim 22; wherein at least one of the location or shape of the exclusion zone varies as a function of a change in location of the GW as required by claim 23; wherein at least one of the location or shape of the exclusion zone varies as a function

of a change in location of the protected site as required by claim 24; nor wherein the exclusion zone is shared between at least two gateways as required by claim 25.

The Examiner has rejected claims 13-18 under 35 U.S.C. 103(a) as being unpatentable over Alperovich et al in view of Maeda et al and further in view of Ishikawa et al (U. S. Patent No. 6,332,069).

The Examiner states regarding claims 13-18, Alperovich et al in view of Maeda et al discloses everything claimed as applied above, directing Applicants' attention to claim 1, however, Alperovich et al in view of Maeda et al fails to specifically disclose the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the UT.

The Examiner contends that in the same field of endeavor, Ishikawa et al discloses a method for determining position of mobile earth station in satellite communication system. In addition, according to the Examiner, Ishikawa et al discloses the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the GW (which reads on t is possible to perform high accuracy position determination by estimating and compensating for the timing error arising from instability in the accuracy of the clock of the mobile earth station and the frequency error resulting from instability of the frequency oscillator of the mobile earth station, as disclosed in col. 6, lines 10-20).

Therefore, the Examiner concludes it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Alperovich et al in view of Maeda et al with the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the UT as taught by Ishikawa et al for the purpose of determining the estimated position of the mobile earth station relative to its true position.

Applicants respectfully submit that claims 13-18 have been shown to be patentably distinguishable over Alperovich et al in view of Maeda et al for reasons recited above with regard to claims 1 and 2 which are hereby respectfully incorporated by reference.

Applicants respectfully contend that Ishikawa et al is directed to a method for uniquely determining the position of a mobile earth station in a mobile satellite communication system which employs a non-geostationary satellite with a multi-spot beams. A given point of a preknown position on the earth surface is defined as the center coordinate of a three-dimensional coordinate axis, information on the measured distance and Doppler shift amount between a mobile earth station of an unknown position and a non-geostationary satellite is used to repeat the estimation of the position of the mobile earth station a plurality of times, thereby obtaining the position of the earth station with high accuracy. Furthermore, by observing the estimated positions of the mobile earth station

obtained as a plurality of solutions at proper time intervals, comparing with one another the movements of the respective estimated positions occurring with the local time proceeds and selecting the estimated position of the minimum movement, the estimated position of the mobile earth station is uniquely determined relative to its true position.

In Ishikawa et al at col. 6, lines 9-20 there is stated "According to another aspect of the present invention, by using the information about measured distances and Doppler shift amounts between the mobile earth station and the non-geostationary satellite, which are measured at different local times, errors in time which are attributable to instability in the position of the mobile earth station and in the accuracy of the clock mounted in the mobile earth station and errors in frequency which result from instability of the frequency oscillator mounted in each mobile earth station can be estimated at the same time. By removing the factors responsible for these errors, it is possible to achieve high accuracy position determination of the mobile earth station."

Applicants respectfully submit that no where in this recited passage relied upon by the Examiner is there taught, suggested or implied wherein the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the UT as required in claim 13; wherein the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the GW as required in claim 14; where the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in a home GW of the UT and is transferred from the home GW to a serving GW when the UT is roaming as required in claim 15; wherein the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT location oscillator is stored in or is determined by the UT and is transferred to the GW as required in claim 16; wherein the UT is granted service if the value of E is less than CL and where the GW sets the value of CL to be less than a possible minimum value of E for excluding all UTs from operating within the exclusion zone as required in claim 17; and finally wherein the UT is granted service if the value of E is less than CL and where the GW sets the value of CL to be greater than a possible maximum value of E for enabling all UTs to operate within the exclusion zone as required in claim 18.

Therefore, Applicants respectfully disagree that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Alperovich et al in view of Maeda et al with the use of the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the UT as taught by Ishikawa et al for the purpose of determining the estimated position of the mobile earth station relative to its true position.

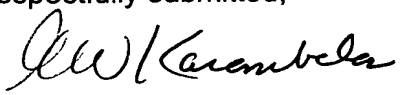
Applicants gratefully acknowledge the allowance of claim 26. The Examiner states regarding claim 26 the prior art of record considered alone or in combination neither anticipates nor renders obvious a mobile satellite communication system comprising at least one gateway, at least one user terminal, and a constellation of satellites, said GW comprising a controller for controlling operations of said UT and further comprising an interface to at least one of the Public Switched Telephone Network (PSTN) or to the Internet, said GW storing a database containing at least one of a Confidence Polygon, a Confidence Volume, or a Confidence Surface to establish a geometric shape located on the earth, above the earth or in space, or combinations thereof, said GW further storing a static or a variable Confidence value that is compared to a value of an error (E) in a position location of the UT, said controller acting upon the database and assigned or derived values of CL and E, to determine if a comparison of CL and E, combined with a current position of the UT, yields a certain result according to the operational mode of the GW controller, wherein depending on the operational mode of the GW the result of the comparison affects control of the UT or an external device attached to the UT, whereby the UT is forbidden or allowed to access the mobile satellite system or to make or receive a call, or depending on the operational mode of the GW the result of the comparison affects some operational characteristic of the UT to provide an ability to protect a site from UT emissions.

Applicants respectfully note that the prior art of record provided numerous teachings of methods for call blocking in a satellite-based network. However, the prior art of record failed to specifically disclose to determine if a comparison of CL and E, combined with a current position of the UT, yields a certain result according to the operational mode of the GW controller, wherein depending on the operational mode of the GW the result of the comparison affects control of the UT or an external device attached to the UT, whereby the UT is forbidden or allowed to access the mobile satellite system or to make or receive a call, or depending on the operational mode of the GW the result of the comparison affects some operational characteristic of the UT to provide an ability to protect a site from UT emissions as set out by the Examiner for reasons of the allowability of claim 26.

Applicants respectfully contend that all of the above reasons cited to support the allowance of claim 26 apply as well to rejected claims 1-25.

Applicants respectfully contend that in view of the previous recitation by the Examiner for the allowability of claim 26 and the remarks made above, all of the claims have been shown to be patentably distinguishable over the prior art of record, Alperovich et al, alone or in combination with either of Maeda et al or Ishikawa et al. Accordingly, Applicants respectfully request that this application be reviewed and reconsidered in view of the above remarks and that a Notice of Allowance be issued at an early date.

Respectfully submitted,



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